

6. Solve each of the following equations for x .

a. $16x + 7x = 46$

b. $12x = 6x - 3$

c. $ax + bx = 10$

d. $px - qx = r$

7. Simplify $k - 2(k - (2 - k))$ as much as possible. Your final answer should not include parentheses.

8. Rewrite each of the following as a *single* fraction.

a. $\frac{3}{a} + \frac{7}{a}$

b. $\frac{3}{a} + \frac{7}{2a}$

c. $\frac{3}{a} + \frac{7}{b}$

d. $3 + \frac{7}{b}$

9. Using the variable x to represent a certain number, write an algebraic expression to represent each of the following.

- Eleven more than one-third of the number
- Three times the difference between the number and twelve
- Two times the number, decreased by the sum of the number and two.

10. Pat bought several pens at Walgreen's, for 60 cents each. Spending the same amount of money at the bookstore, Pat then bought some pens that cost 80 cents each. In all, 42 pens were bought. How many pens did Pat buy at the bookstore?

11. A ladder is leaning against the side of a building. Each time I step from one rung to the next, my foot moves 6 inches closer to the building and 8 inches further from the ground. The base of the ladder is 9 feet from the wall. How far up the wall does the ladder reach?

12. Which is greater, 73 percent of 87, or 87 percent of 73?

13. If k stands for an integer, then is it possible for $k^2 + k$ to stand for an *odd* integer? Explain.